

Application No. 09/903,368
Amendment dated May 19, 2003
Reply to Office Action of March 13, 2003

This proposed listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (currently amended) A timer for controlling the activation of a load during repeating cycles, the timer including:
- a control unit having an internal timer;
- a relay unit connected between the control unit and the load, wherein the control unit activates the relay unit to supply power to the load;
- a time base dial coupled to the control unit, the time base dial movable between a plurality of discrete time base settings to set one of a plurality of different durations for to set the duration of the repeating cycle in the control unit such that a user can select between the plurality of durations by moving the time base dial between the plurality of time base settings, wherein the time base settings increase non-linearly from a minimum setting to a maximum setting; and
- a duty cycle dial coupled to the control unit, the duty cycle dial movable between a plurality of discrete duty cycle settings to set one of a plurality of different percentages to set the percentage of actuation time of the load during each repeating cycle in the control unit, such that the user can select between the plurality of percentages by moving the duty cycle dial between the plurality of duty cycle settings, wherein the duration of the repeating cycle is selectable independently from the percentage of actuation time of the load.
2. (original) The timer of claim 1 wherein the duty cycle settings increase linearly from a minimum setting to a maximum setting.
3. (original) The timer of claim 1 wherein the duty cycle settings increase non-linearly from a minimum setting to a maximum setting.
4. (currently amended) A timer for controlling the activation of a load during repeating cycles, the timer including:

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a control unit having an internal timer;

a relay unit connected between the control unit and the load, wherein the control unit activates the relay unit to supply power to the load;

a time base dial coupled to the control unit, the time base dial movable between a plurality of discrete time base settings to set the duration of the repeating cycle in the control unit, wherein the time base settings increase non-linearly from a minimum setting to a maximum setting; and

a duty cycle dial coupled to the control unit, the duty cycle dial movable between a plurality of discrete duty cycle settings to set the percentage of actuation time of the load during each repeating cycle in the control unit, wherein duty cycle settings increase non-linearly from a minimum setting of 0% and a maximum setting of 100%, The timer of claim 3 wherein the minimum setting is 0% and the maximum setting is 100%, and wherein the amount of increase in the percentage between successive duty cycle settings is smaller near both the minimum setting and the maximum setting and larger near a midpoint between the minimum and maximum settings such that the duty cycle dial has greater resolution near the minimum and maximum settings.

5. (original) The timer of claim 3 wherein the increase in value between successive duty cycle settings increases exponentially from the minimum setting to the maximum setting.

6. (original) The timer of claim 1 wherein the maximum time base setting is at least as large as 24 hours and the minimum time base setting is at least as small as 30 seconds.

7. (previously amended) The timer of claim 1 wherein the time base dial generates a digital signal defining thirty-two discrete time base settings.

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8. (original) The timer of claim 1 wherein the time base settings increase generally exponentially between the minimum setting and the maximum setting.

9. (currently amended) A timer for controlling the activation of a load during repeating cycles, the timer including:

a time base dial movable between a plurality of discrete time base settings to set one of a plurality of different durations for to set the duration of the repeating cycle between a maximum setting and a minimum setting;

a duty cycle dial movable between a plurality of discrete duty cycle settings to set one of a plurality of different percentages to set the percentage of actuation time of the load during each repeating cycle between a maximum setting and a minimum setting, wherein the duration of the repeating cycle is selectable independently from the percentage of actuation time of the load during each repeating cycle;

a control unit coupled to both the time base dial and the duty cycle dial, the control unit assigning one of a plurality of a-time base values corresponding to the duration of the repeating cycle set by the selected for each time base setting and one of a plurality of a-duty cycle values corresponding to the percentage of actuation set by the selected for each duty cycle setting, wherein the time base values increase non-linearly from the minimum time base setting to the maximum time base setting; and

a relay unit coupled between the control unit and the load, the relay unit being activated by the control unit to supply power to the load based upon the time base value and the duty cycle value corresponding to the current settings of the time base dial and the duty cycle dial.

10. (original) The timer of claim 9 wherein the duty cycle values increase linearly from the minimum duty cycle setting to the maximum duty cycle setting.

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11. (original) The timer of claim 9 wherein the duty cycle values increase non-linearly from the minimum duty cycle setting to the maximum duty cycle setting.

12. (currently amended) A timer for controlling the activation of a load during repeating cycles, the timer including:

a time base dial movable between a plurality of discrete time base settings to set the duration of the repeating cycle between a maximum setting and a minimum setting;

a duty cycle dial movable between a plurality of discrete duty cycle settings to set the percentage of actuation time of the load during each repeating cycle between a maximum setting and a minimum setting, wherein duty cycle settings increase non-linearly from minimum setting of 0% and the maximum setting of 100%, The timer of claim 11 wherein the minimum duty cycle value is 0% and the maximum duty cycle value is 100%, and wherein the amount of increase in the duty cycle value between successive duty cycle settings is smaller near both the minimum duty cycle setting and the maximum duty cycle setting and the amount of increase in the duty cycle value between successive duty cycle settings is larger near a midpoint between the minimum and maximum duty cycle settings such that the duty cycle dial has greater resolution near the minimum and maximum duty cycle settings;

a control unit coupled to both the time base dial and the duty cycle dial, the control unit assigning a time base value corresponding to the duration of the repeating cycle for each time base setting and a duty cycle value corresponding to the percentage of actuation for each duty cycle setting, wherein the time base values increase non-linearly from the minimum time base setting to the maximum time base setting; and

a relay unit coupled between the control unit and the load, the relay unit being activated by the control unit to supply power to the load based upon the time base value and the duty cycle value corresponding to the current settings of the time base dial and the duty cycle dial.

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13. (original) The timer of claim 11 wherein the duty cycle values increase exponentially from the minimum duty cycle setting to the maximum duty cycle setting.

14. (original) The timer of claim 11 wherein the duty cycle values increase exponentially from the minimum duty cycle setting to the maximum duty cycle setting.

15. (previously amended) The timer of claim 9 wherein the time base dial generates a digital signal having thirty-two discrete time base settings.

16. (original) The timer of claim 9 wherein the time base values increase exponentially between the minimum setting and the maximum setting.

17. (cancelled)

18. (cancelled)

19. (cancelled)